

## **REMARKS**

### **I. Status of Claims**

Claims 1-11 are pending in the application, with claims 1, 5, and 10-11 being the elected independent claims. Claims 5, 8, and 11 are currently amended. Support for the amendments can at least be found in claim 7, as well as in paragraphs [0089]-[0096] of the application as published. Thus, it is respectfully submitted that no new matter is added.

Claims 5-6, 9, and 11 stand rejected under 35 USC 103(a) as allegedly being unpatentable over USP 5,319,928 to Bone ("Bone") in view of U.S. Patent Publication No. 2004/0011027 to Hirooka ("Hirooka I").

Claims 5-9 and 11 stand rejected under 35 USC 103(a) as allegedly being unpatentable over JP Publication 2003/314263 to Hirooka ("Hirooka") in view of Bone.

Claims 1-4 and 10 are allowed.

The Applicant respectfully requests reconsideration of these rejections in view of the foregoing amendments to the specification and the following remarks.

### **II. Remarks Regarding Rejections Under 35 USC § 103**

Following the above-identified amendments, it would appear that claims 5 and 11 would be allegedly unpatentable under 35 USC 103(a) over Hirooka in view of Bone.<sup>1</sup>

The Applicant respectfully submits that claims 5 and 11 are patentable over the cited references at least because they recite, *inter alia*, "...wherein the failure determining device determines whether failure has occurred in the secondary air supply apparatus based on a result of the detection that is performed by the pressure detector *while the first opening/closing valve, the second opening/closing valve, and the third opening/closing valve are controlled so as to be closed.....*" (emphasis added)

Certain embodiments of the present invention, such as FIG. 4, reproduced below, are directed to a vehicle system that, while the vehicle system is being started, in the case where the AI performing condition is not satisfied, and the AI is unperformed ("YES" in step S500), it is

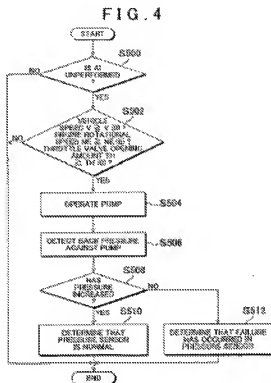
determined whether all of the condition that the vehicle speed V is equal to or higher than the predetermined vehicle speed V (0), the condition that the engine rotational speed NE is equal to or higher than the predetermined rotational speed NE (0), and the condition that the throttle valve opening amount TH is equal to or larger than the predetermined opening amount TH (0) are satisfied. See paragraph [0089] of the application as published.

If all of the condition that the vehicle speed V is equal to or higher than the predetermined vehicle speed V (0), the condition that the engine rotational speed NE is equal to or higher than the predetermined rotational speed NE (0), and the condition that the throttle valve opening amount TH is equal to or larger than the predetermined opening amount TH (0) are satisfied ("YES" in step S502), the air pump 200 is operated (S504). If the air pump 200 is operated when the AI is unperformed, that is, the electromagnetic ASV 212, the vacuum pressure ASV (1) 222, and the vacuum pressure ASV (2) 232 *are in the closed state*, air delivered under pressure from the air pump 200 *is confined in the first air passage 210*. Therefore, operating noise of the air pump 200 becomes large. Accordingly, an occupant may feel uncomfortable due to the operating noise of the air pump 200. However, when the vehicle speed V is equal to or higher than the predetermined vehicle speed V (0), the engine rotational speed NE is equal to or higher than the predetermined rotational speed NE (0), and the throttle valve opening amount TH is equal to or larger than the predetermined opening amount TH (0), road noise, and the operating noise and the exhaust noise of the engine 100 are large. When the air pump 200 is operated in such a situation, it becomes hard for the occupant to hear the operating noise of the air pump 200 due to the road noise, and the operating noise and the exhaust noise of the engine 100. *Therefore, it is possible to reduce the possibility that the occupant feels uncomfortable due to the operating noise of the air pump 200.* When the air pump 200 is operated (S504), the pressure inside the first air passage 210 is detected (S506). Since the air is delivered under pressure when the air pump 200 is operated, the pressure inside the first air passage 210 increases. Therefore, if the pressure sensor 306 is normal, the pressure detected by the pressure sensor 306 increases. Accordingly, if the pressure has increased ("YES" in step S508), it is determined that the pressure sensor 306 is normal (S510). Meanwhile, if the pressure has not

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<sup>1</sup> We note that rejections relying upon Bone in view of Hirooka I were not applied against claim 7.

increased ("NO" in step S508), it is determined that failure has occurred in the pressure sensor 306. See paragraphs [0090]-[0094] of the application as published.



**FIG. 4 of the present application**

That being said, it is respectfully submitted that, in contrast to the inventions of claim 5 and 11, Hirooka does not describe wherein the failure determining device determines whether failure has occurred in the secondary air supply apparatus based on a result of the detection that is performed by the pressure detector while the first opening/closing valve, the second opening/closing valve, and the third opening/closing valve *are controlled so as to be closed*.

Instead, the opening/closing condition of an opening/closing means (ASV) is *changed over* during operation of the air pump. The closing abnormality of a main passage and a branched passage is diagnosed on the basis of pressure values (P1, P2) before and after opening/closing detected by a pressure sensor arranged between the air pump and the ASV, the magnitude of a pressure variation value ( $\Delta P = P1 - P2$ ), and a variation amount ( $\Delta AF1$  and  $\Delta AF2$ ) of an A/F value at each exhaust system. See Abstract of Hirooka.

Further, as shown in FIG. 1 of Hirooka, reproduced below, this reference discloses an ASV and two check valves 16a and 16b. The Office Action purports to equate the check valves 16a and 16b to the Applicant's second and third opening/closing valves. However, it is respectfully submitted that check valves 16a and 16b do not equate to the Applicant's second and third opening/closing valves.

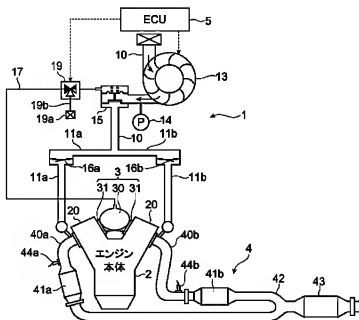


FIG. 1 of Hirooka

Specifically, check valves 16a and 16b do not close off passages 11a and 11b. Evidencing the Applicant's position, paragraph [0017] of the machine translation of Hirooka (obtained from JPO website) states as follows:

[0017]The secondary air supply passage of the secondary air feeder 1 comprises the branch passages 11a and 11b which branch to two by the main path 10 and the downstream of the upstream, and are connected to the exhaust manifolds 40a and 40b, respectively. The air filter 12 is arranged at the entrance of the main path 10, and by the time it branches to the downstream and the branch

passages 11a and 11b, the air pump (AP) 13 of an electric motor drive type, the pressure sensor 14, and the air switching valve (ASV) 15 will be arranged in order. The piping 17 prolonged from the surge tank 30 is connected to this ASV15, and the electromagnetic switching valve (VSV) 19 is arranged on this piping 17. The piping 19b which has the filter 19a is connected to this VSV19. Only when the pressure of the upstream is high respectively on the branch passage 11a and 11b, reed-valve (RV)16a *which is a check valve which makes a passage open for free passage*, and 16b are arranged. (emphasis added)

Thus, check valves 16a and 16b do not close off passages 11a and 11b as the Applicant's second and third opening/closing valves do in the inventions of claims 5 and 11.

Accordingly, lacking any teaching and/or suggestion of "...wherein the failure determining device determines whether failure has occurred in the secondary air supply apparatus based on a result of the detection that is performed by the pressure detector while *the first opening/closing valve, the second opening/closing valve, and the third opening/closing valve are controlled so as to be closed*.....," the proposed combination of Hirooka and Bone fails to render the inventions of claims 5 and 11 obvious.

Also, as discussed in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007), it is necessary to identify the reason why a person of ordinary skill in the art would have been prompted to modify the cited references in the manner as recited in the inventions of claims 5 and 11. Obviousness cannot be sustained by mere conclusory statements.

Therefore, the Applicant respectfully submits that claims 5 and 11, as well as any of their dependent claims, are patentable over the cited references. Moreover, it is respectfully submitted that claims 1-6, and 8-11 are in condition for allowance.

**III. Conclusion**

In light of the above discussion, the Applicant respectfully submits that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance. The Examiner is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

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By: /Daniel G. Shanley/  
Daniel G. Shanley  
(Reg. No. 54,863)

KENYON & KENYON LLP  
1500 K Street, N.W., Suite 700  
Washington, D.C. 20005-1256  
Telephone: (202) 220-4200  
Facsimile: (202) 220-4201  
Customer No. 23838